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Non-alcoholic Beverages.

(This Invention received Provisional Protection only.)

PROVISIONAL SPECIFICATION left by Agatha Colomba Laura Weigel at the Office of the Commissioners of Patents on the 24th November 1883.

AGATHA COLOMBA LAURA WEIGEL of Brighton in the County of Sussex "AN IMPROVED MANUFACTURE OF NON-ALCOHOLIC BEVERAGES FROM GRAPES OR OTHER FRUITS"

This invention relates to the manufacture, from grapes or other fruits, of beverages containing all the constituents and having all the properties of good, genuine, fermented wine, with the sole exception of the alcohol.

For this purpose, I take ripe grapes, by preference of such kinds as are used for the manufacture of Champagne and other sparkling wines. The grapes are crushed and pressed in the usual way, and the juice is subjected to the first stage of fermentation until its cloudiness has disappeared. The liquor is then drawn off from the sediment, and fined with isinglass or by any other known means, and the clear fluid is pumped into a vacuum pan, where it is subjected to a gentle heat for the purpose of evaporating all the alcohol from it. The evaporation may also be effected without a vacuum, but, as the heat in this case would have to be increased, the product might have an objectionable flavour, whereas by the use of a vacuum pan, the heat need not exceed 150° to 160° Fahr., and the product would therefore retain its freshness of taste without having its flavour altered by heating. During the evaporation the ethers are first distilled off and collected in a separate vessel, and then the alcohol, which is condensed by worms such as are used with ordinary stills. This alcohol, from which the ethers may be completely separated by fractional distillation, being of a very pure character, is valuable for medicinal and chemical purposes.

After the liquor has thus been liberated from every vestige of alcohol, it is run off by a cock or valve at the bottom of the pan, into a set of worms kept cool by a continuous stream of cold water. The liquor thus cooled is passed through a filtering apparatus so constructed as to exclude air into an air-tight reservoir embedded in ice or placed in a refrigerating chamber, so as to keep the temperature in it just above freezing point. After the liquor has entered this reservoir, the ethers evaporated from it during distillation are added to it along with a certain proportion of unfermented condensed grape or fruit juice, specially prepared for this purpose in the following manner;—Fresh ripe grapes are crushed and the crushed

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Weigel's Improved Manufacture of Non-alcoholic Beverages from Grapes, &c.

mass subjected to the action of a filter-press. The juice that runs off is, if necessary, strained through a filter until quite clear, and is as soon as possible boiled down to a consistence of a thick syrup or jelly. In this state, the juice may be kept in a close vessel in a cool atmosphere until it is wanted for the purpose described. The proportion of this condensed juice to be added to the fluid in the reservoir varies 5 according as a dry or a sweet beverage is desired, and also according to the sweetness of the must condensed. After the addition of the condensed must with the ethers as above mentioned, the liquor is stirred by a revolving agitator, worked from the outside, so that no air enters the reservoir.

The liquor thus prepared can be bottled as a "still" beverage. 10

For the purpose of manufacturing an aerated or sparkling beverage, the juice is drawn off from the reservoir into an apparatus such as is employed for aerating liquors, and, being impregnated with carefully prepared carbonic acid gas, it is bottled in the usual way.

The whole operation and apparatus above described are so arranged that the 15 juice, from the moment it is placed in the vacuum-pan, until it is bottled, is entirely excluded from contact with the air, so that no atmospheric germs can contaminate it or create fermentation.

Instead of grape juice as above described, I may employ juices of other fruits, such as apples, pears, currants *etc.*, or of dried fruits, such as raisins, or dates or the 20 like; or I may employ ready made wine, cider *etc.*, and evaporate the alcohol therefrom and treat the liquor as above described.

The condensed must or fruit juice, used for sweetening, may be flavoured by addition of aromatic or sweetening substances or essences.

For the purpose of manufacturing a "tonic" or "medicinal" beverage, the 25 grape or fruit juice may have added to it infusions or extracts or vegetable alkaloids or other preparations as desired.

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